

# Orchard

## **Carrot or Stick?**

### **How we got User buy in for Mac Management at the University of Oxford**

European Macintosh System Administrators Meeting, Göteborg

18.09.2013

# Orchard

## Carrot or Stick?

### How we got User buy in for Mac Management at the University of Oxford

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# Acknowledgements

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UNIVERSITY OF  
OXFORD

# Oxford at a glance



- » Oxford was the first University in the English-speaking world.
- » Our aim is to remain at the forefront of centres of learning, teaching and research.



# Oxford at a glance



- » In 2010-11, total University income was £919.6 million.
- » Total University expenditure in 2010-11 was £908.2 million.
- » Oxford consistently has the highest research income from external sponsors



# Oxford at a glance



- » The University, including the colleges and Oxford University Press, is the largest employer in Oxford, supporting more than 18,000 jobs and injecting £750 million annually into the regional economy.



# Oxford at a glance



- » There are over 21,000 students at Oxford, including 11,723 undergraduates and 9,327 postgraduates.
- » 42% of Oxford students are citizens of 143 foreign countries.



# Oxford at a glance



- » Oxford's research activity involves more than 70 departments, the colleges, over 1,600 academic staff, more than 3,500 research and research support staff, and over 4,600 graduate research students.



# Oxford at a glance

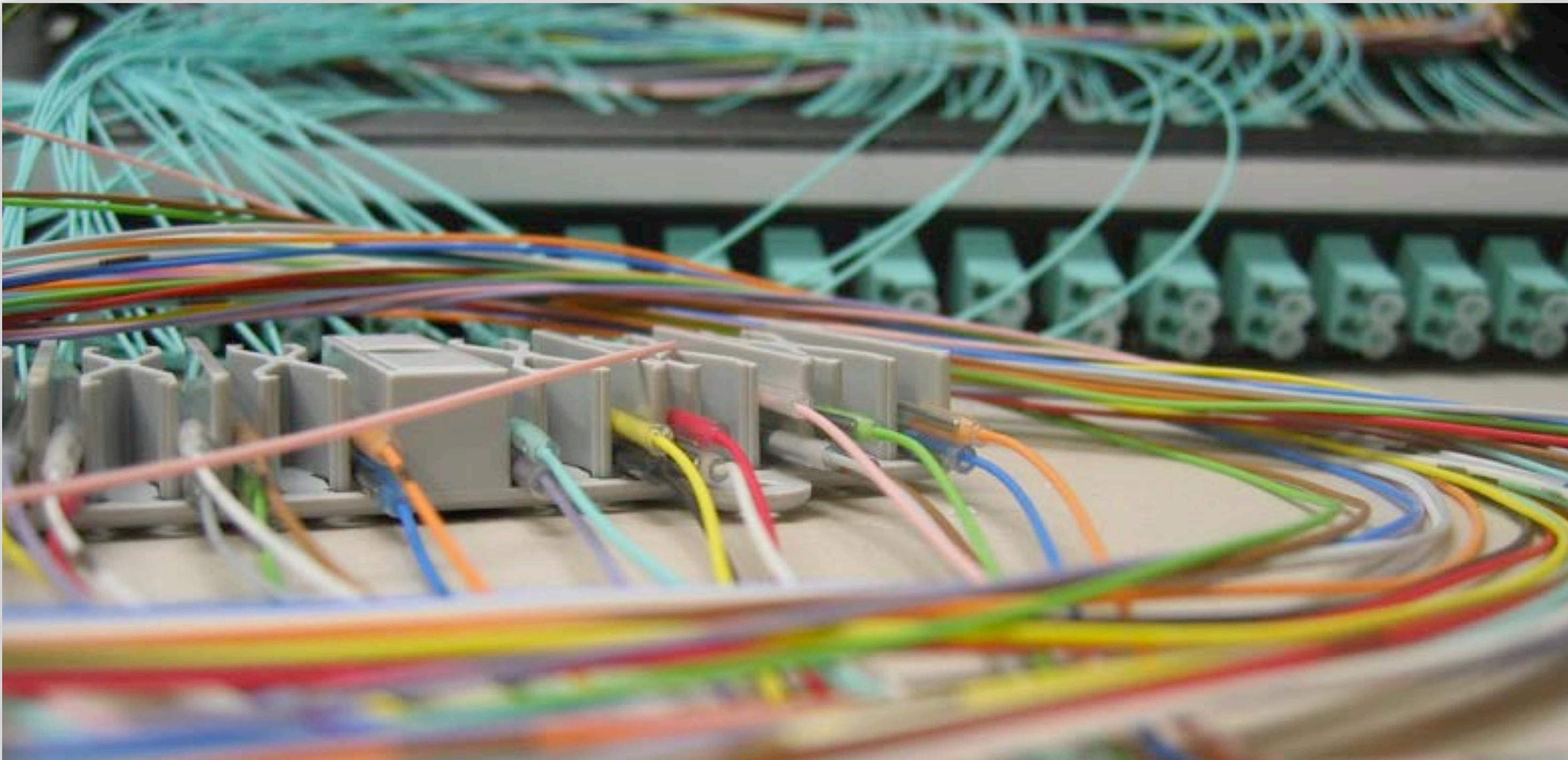


- › More than 70 departments.
- › 38 colleges and 6 permanent private halls.
- › 290 buildings totaling some 530,000 m<sup>2</sup>.



# Oxford at a glance

- » City spanning campus network. Daily backbone traffic more than 55 TB.
- » More 43,500 accounts and over 51,959 user Kerberos principals.
- » Weekly backup volume 65.9 million files or 88.3 TB, totalling 1.6 PB



# Oxford at a glance



- » IT Services provides services from the centre
- » Local IT support staff in every department or college
- » In total over 660 registered IT support staff



# Know Your Enemy



End Users: Students, Researchers, and Administrative Staff



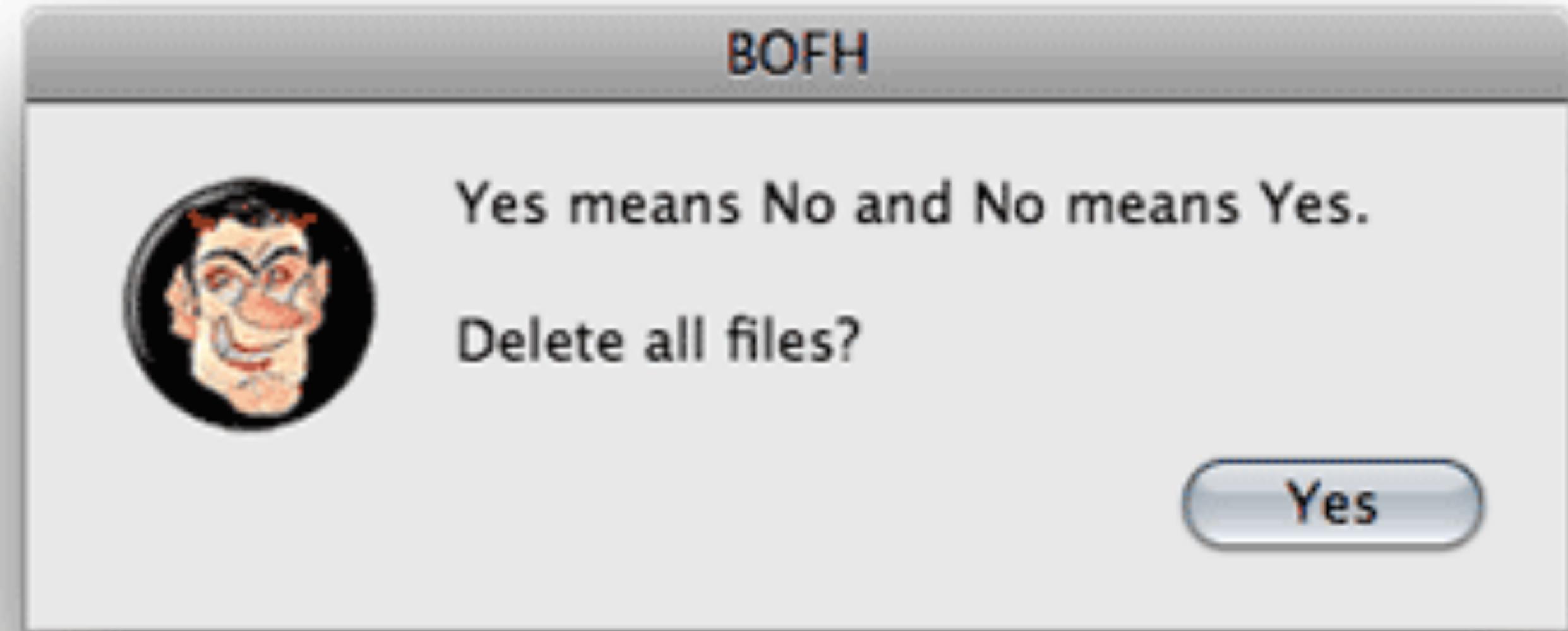
CEO, CIO, and other Senior Management



Local IT Support Staff and IT Managers

**“Focus on the user and  
all else will follow”**

# There are only 10 types of Admins ;)

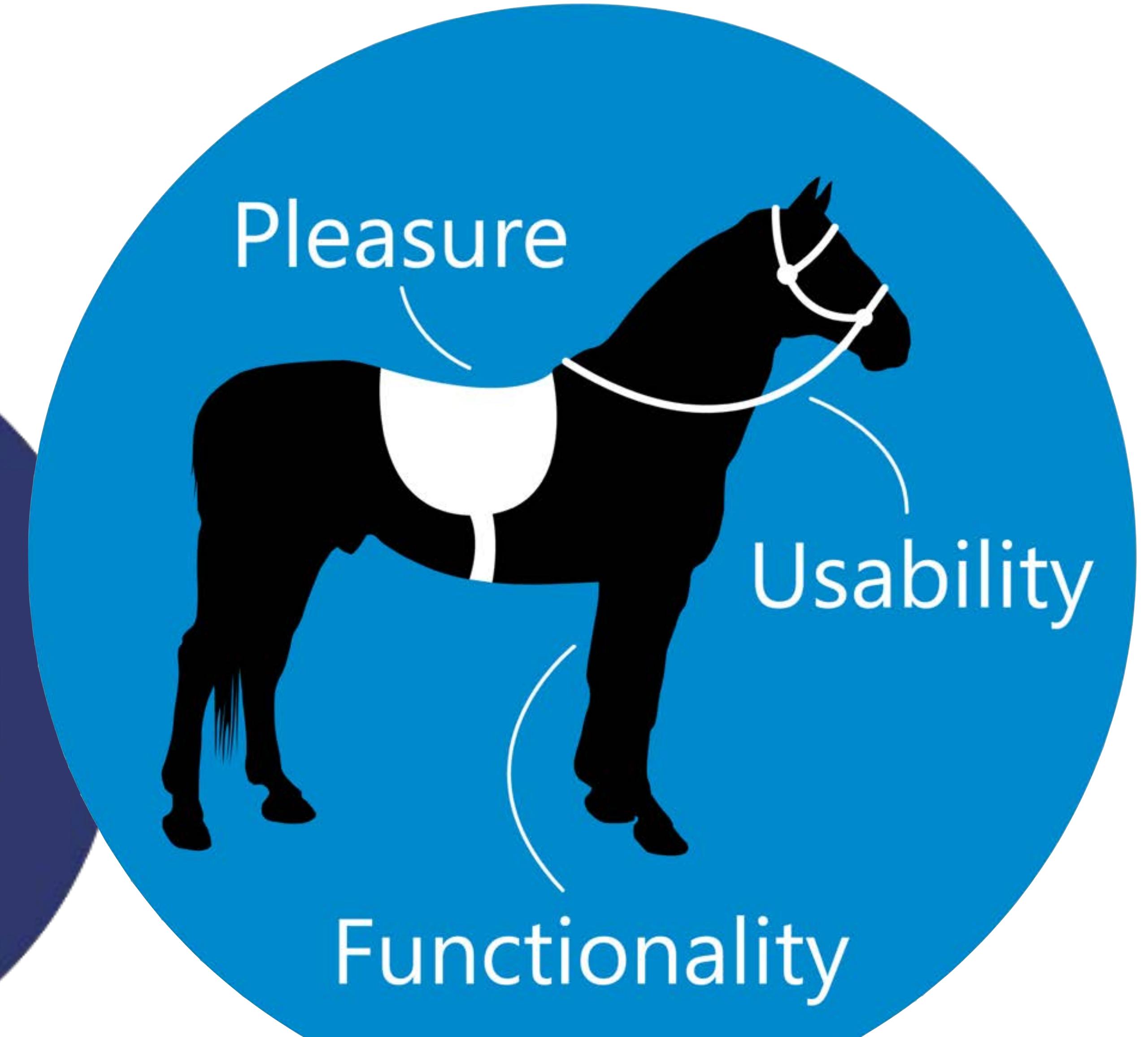
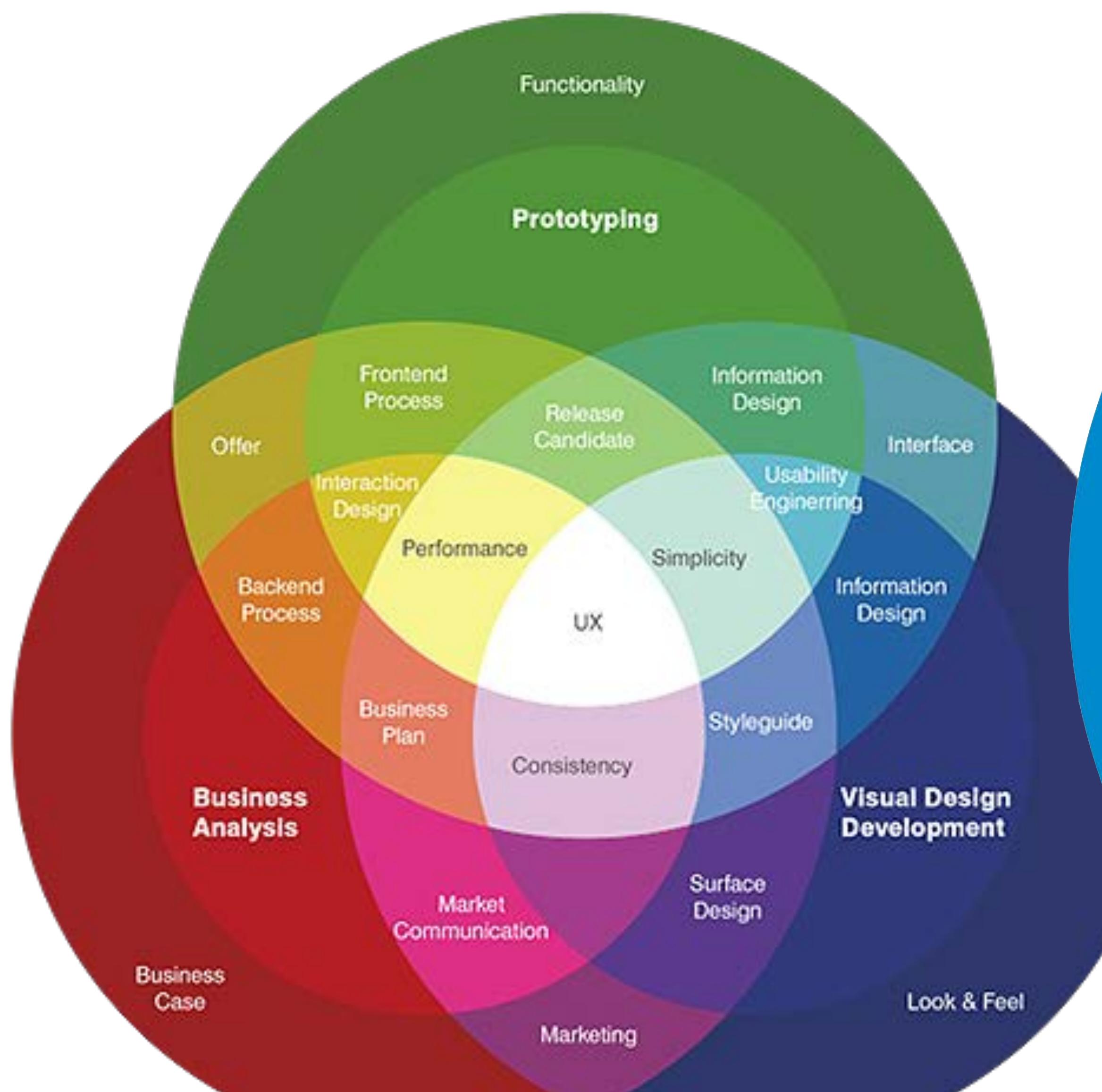


# Which kind are you?



Do you grant your users administrative permissions?

# User Experience Management



# Out of the Box Experience



# Light Touch



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# Light Touch



# Mac App Store



# Mac App Store Product Usage Rules



Except as otherwise set forth herein,

- (i) If you are an *individual acting in your personal capacity*, you may download and use an application from the Mac App Store (“Mac App Store Product”) for *personal, non-commercial use* on any Apple-branded products running Mac OS X (“Mac Computer”) *that you own or control*.
- (ii) If you are a *commercial enterprise or educational institution*, you may download a Mac App Store Product for use by either
  - (a) a *single individual on each of the Mac Computer(s)* used by that individual *that you own or control* or
  - (b) *multiple individuals on a single shared Mac Computer* that you own or control. [...]

Source: <http://www.apple.com/legal/internet-services/itunes/us/terms.html>

# Mac App Store

› “*Why can't I download my personal Apps?*”

- Educate your users
- Explain your end-users these rules and license terms

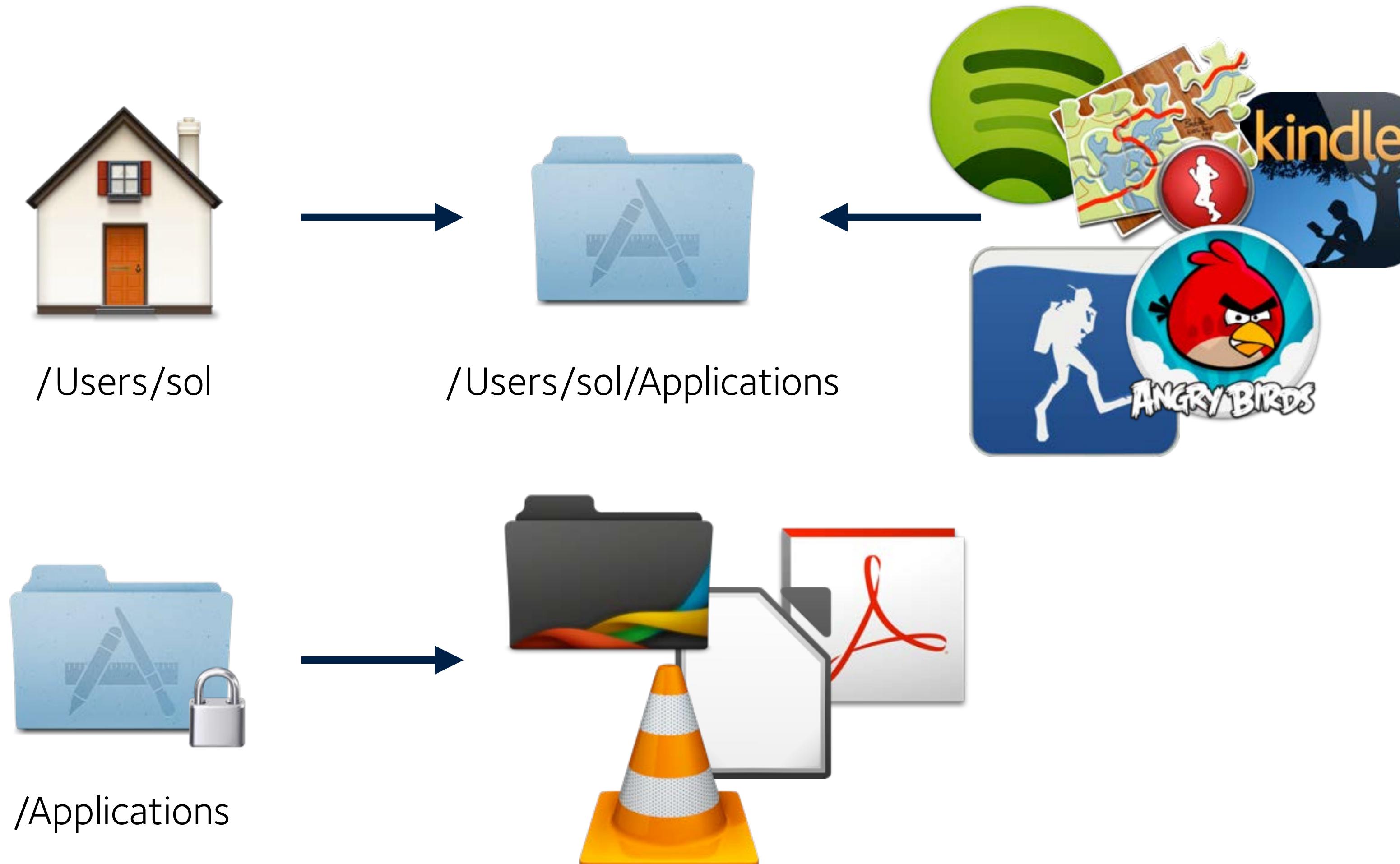
› “*Why can't I open this file?*”

- Preinstall viewers for the most common data formats
- Collect requests and define a threshold for deployment of new core software

› “*Why can't I use tool foo it is way better than bar?*”

- One tool for each purpose agreed with user representatives
- There is always ~/Applications for the majority of Apps

# Applications



# In-House App Store



The screenshot shows the "Self Service" application window, which is a Mac OS X-style interface for managing software installations. The window has a title bar "Self Service" and a search bar. On the left is a sidebar with links like "Getting Started", "Help", "Knowledge Base", and "Latest Updates". The main area is titled "Featured" and displays a grid of software icons with "INSTALL" buttons. The categories listed in the sidebar are:

- Featured
- Communications and Web
- Design and Media
- Licensed Software
- Office and Productivity
- Scientific
- Support
- System Administration
- Updates
- Utilities

Software items visible in the grid include:

Category	Software	Icon	Action
Featured	AA Apple Final Cut Studio (2009)	Clapboard icon	INSTALL
Featured	Adium	Green alien icon	INSTALL
Featured	Adobe Acrobat XI Pro	PDF icon	INSTALL
Design and Media	Adobe CS6 Master Collection	Software box icon	INSTALL
Design and Media	Adobe Photoshop Elements 9	PSE icon	INSTALL
Design and Media	Alfred	Magnifying glass icon	INSTALL
Design and Media	Apple Server Admin Tools 10.6	Globe icon	INSTALL
Design and Media	ChemBioDraw Ultra	ICD icon	INSTALL
Design and Media	Citrix ICA Client	Red button icon	INSTALL
Utilities	CmapTools	Network diagram icon	INSTALL
Utilities	CoRD	Blue diamond icon	INSTALL
Utilities	doubleTwist	Blue arrow icon	INSTALL
Utilities	Emacs	Blue S icon	INSTALL
Utilities	Endnote X4	EN icon	INSTALL
Utilities	Endnote X6	Red EN icon	INSTALL

# In-House App Store



The screenshot shows the "Self Service" application window, which is a Mac OS X-style interface for managing software installations. The main area is titled "Scientific" and displays several software packages:

- ChemBioDraw Ultra (Install button)
- Endnote X4 (Install button)
- Endnote X6 (Install button)
- MacTeX 2011 (Install button)
- MacTeX 2013 (Install button)
- Mendeley Desktop (Install button)
- Oxygen (Install button)
- R Project (Install button)
- SPSS Statistics (Install button)
- StatPlus (Install button)

The left sidebar contains links to "Getting Started", "Help", "Knowledge Base", and "Latest Updates". The right sidebar lists "Categories" including Featured, Communications and Web, Design and Media, Licensed Software, Office and Productivity, Scientific, Support, System Administration, Updates, and Utilities.

# In-House App Store



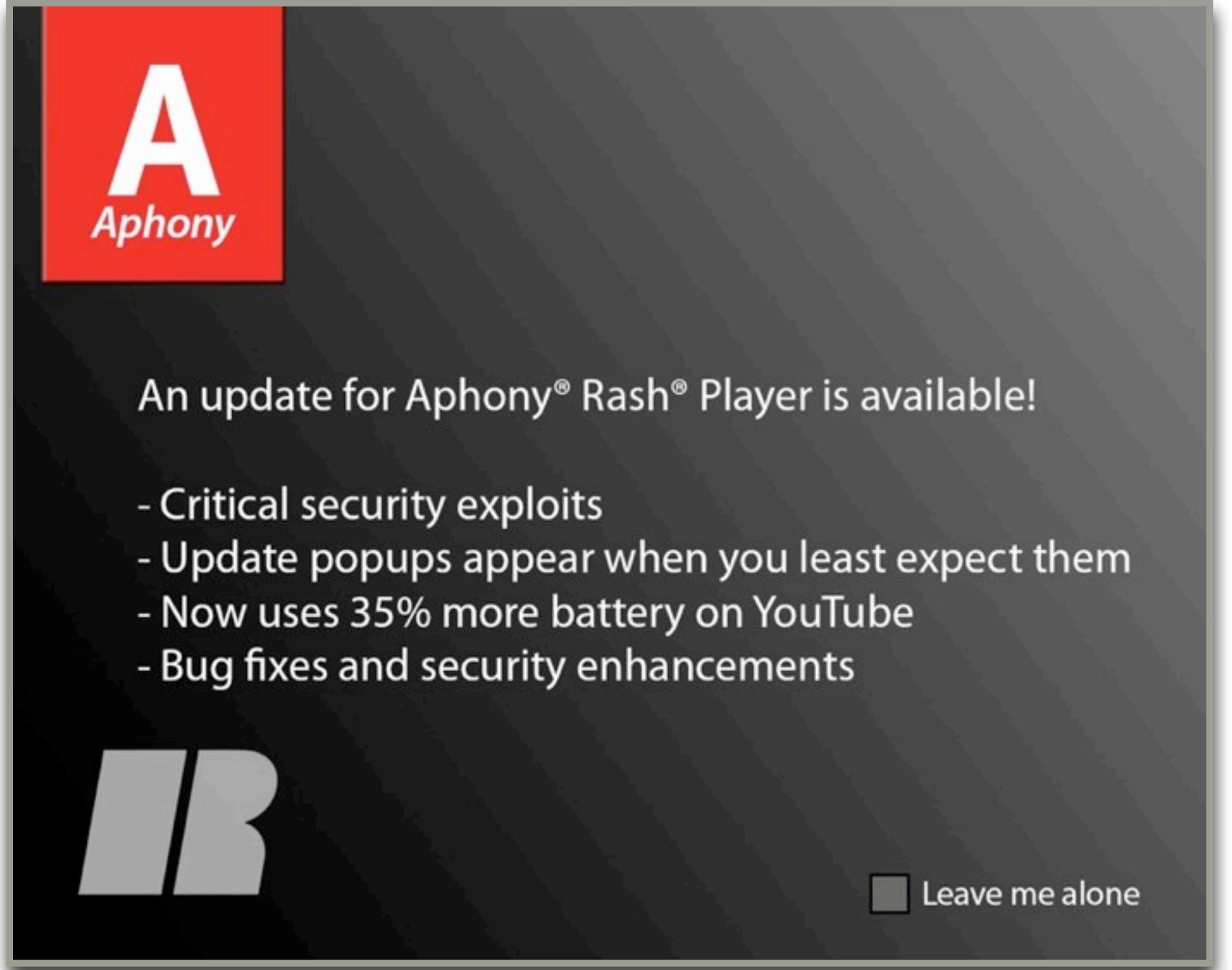
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The screenshot shows the 'Self Service' application window. On the left is a sidebar with links: 'Self Service' (mmpjss.nsms.ox.ac.uk), 'Getting Started' (New to the Mac?), 'Help' (Request support from NSMS), 'Knowledge Base' (Frequently asked questions), and 'Latest Updates' (The MMP Software Updates blog). The main area is titled 'Licensed Software' and displays four items:

- AA Apple Final Cut Studio (2009) with an 'INSTALL' button.
- Adobe CS6 Master Collection with an 'INSTALL' button.
- Adobe Photoshop Elements 9 with an 'INSTALL' button.
- VMware Fusion 5 with an 'INSTALL' button.

To the right of the software list is a 'Categories' sidebar with links: Featured, Communications and Web, Design and Media, Licensed Software, Office and Productivity, Scientific, Support, System Administration, Updates, and Utilities.

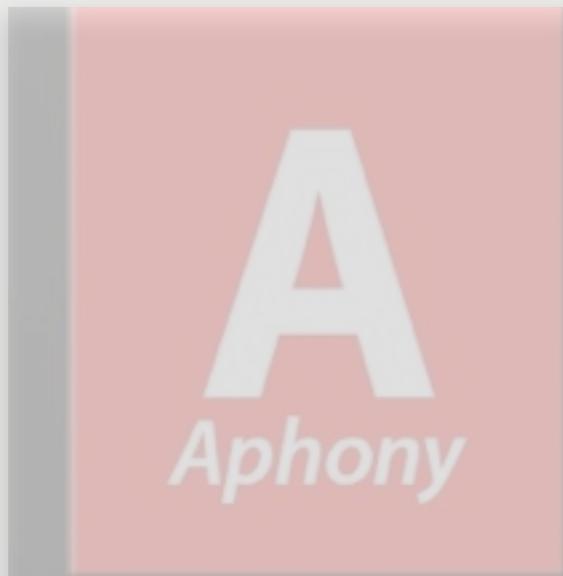
# In-House App Store



# Dealing with Updates



- › Define your update cycle
- › Facilitate auto-update features
- › Suppress update notifications
  - MCX
  - Configuration Profiles
  - Vendor specific (proprietary) settings file
- › Remind your suppliers about its importance
- › Ensure this gets part of every procurement decision

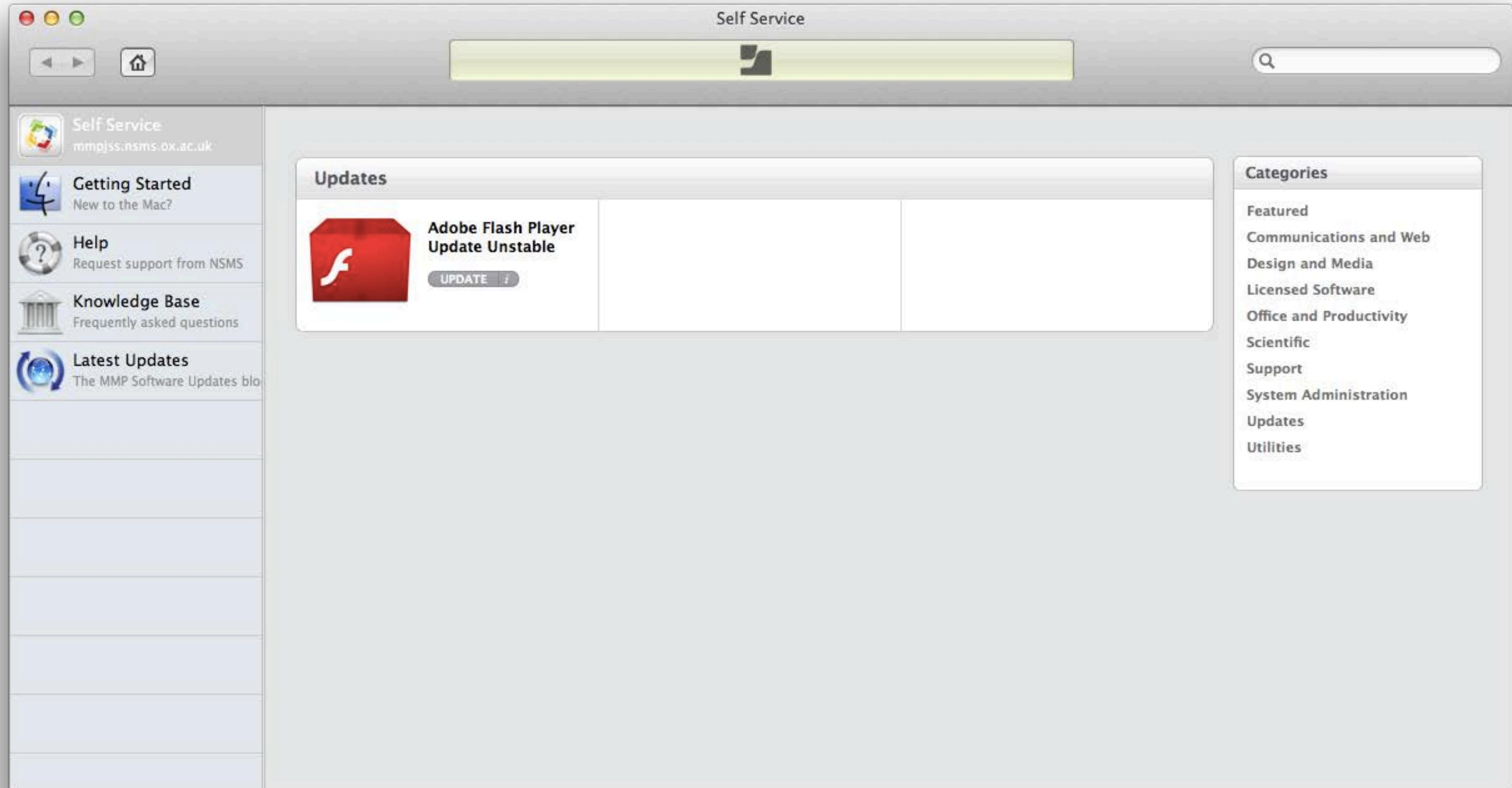


An update for Aphony® Rash® Player

- Critical security exploits
- Update popups appear when you le
- Now uses 35% more battery on You
- Bug fixes and security enhancemen



# Even more Self Service



# Even more Self Service

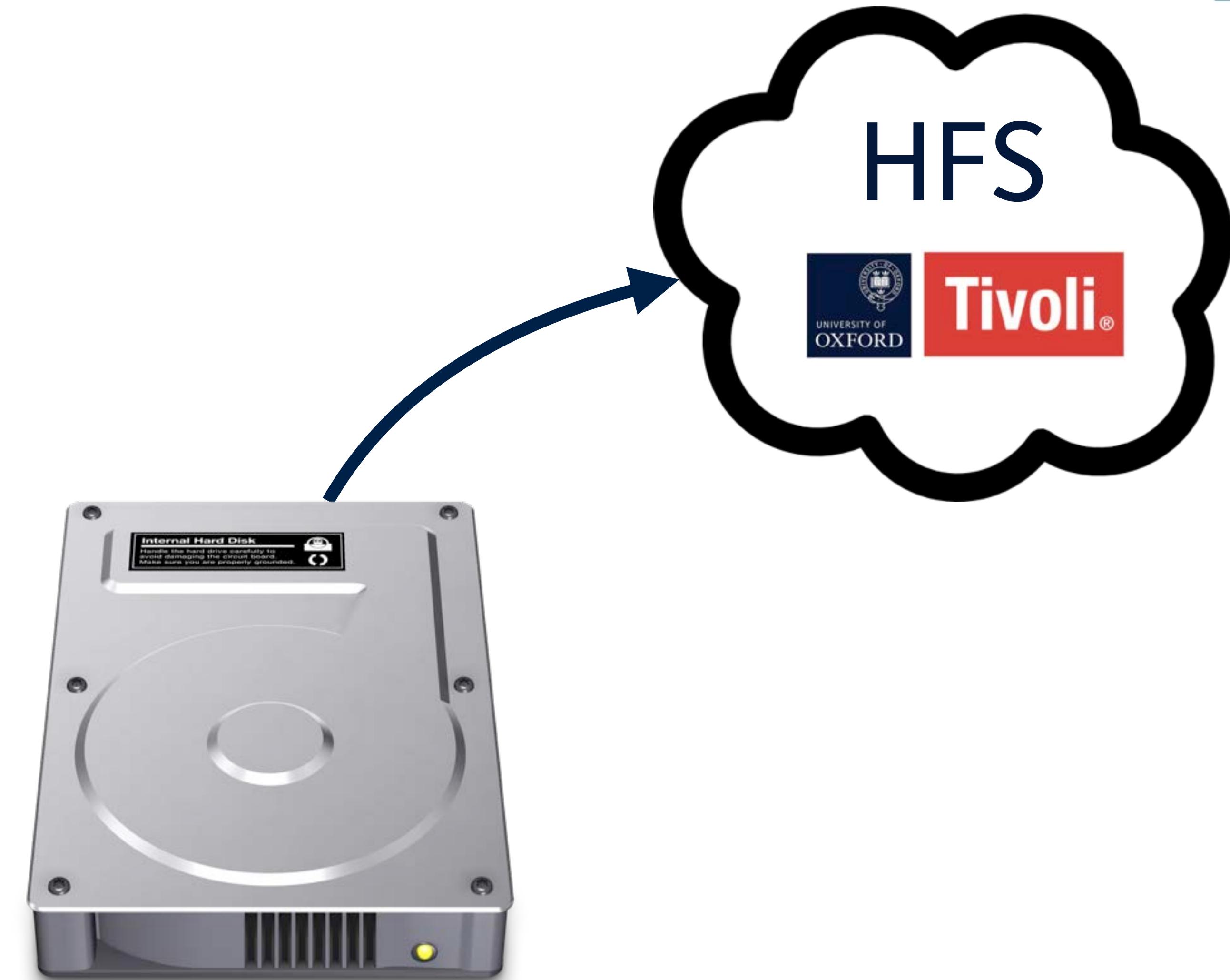
A screenshot of the OS X Mavericks Self Service application window. The window title is "Self Service". On the left, there's a sidebar with links: "Self Service" (mmpjss.nsms.ox.ac.uk), "Getting Started" (New to the Mac?), "Help" (Request support from NSMS), "Knowledge Base" (Frequently asked questions), and "Latest Updates" (The MMP Software Updates blog). The main content area is titled "Support" and contains several service cards:

- "Java Web Plugin Master Switch" (LAUNCH)
- "Mount Departmental Shares" (MOUNT SHARES)
- "Reinstall Blavatnik School of Government Printers" (REINSTALL)
- "Reinstall NSMS Printers" (REINSTALL)
- "Reinstall OUCS Help Centre Printers" (REINSTALL)
- "Run Apple Software Update" (UPDATE)
- "Spotlight Index" (RUN)
- "System Inventory" (INVENTORY)
- "Uninstall Endnote X4" (UNINSTALL)
- "Wacom Tablet Drivers Unstable" (INSTALL)

A search bar at the top right has the text "Self Service". A categories sidebar on the right lists: Featured, Communications and Web, Design and Media, Licensed Software, Office and Productivity, Scientific, Support, System Administration, Updates, and Utilities. In the bottom right corner of the window, there is a circular portrait of a man.

OS X Mavericks

# “Only wimps use tape backup”

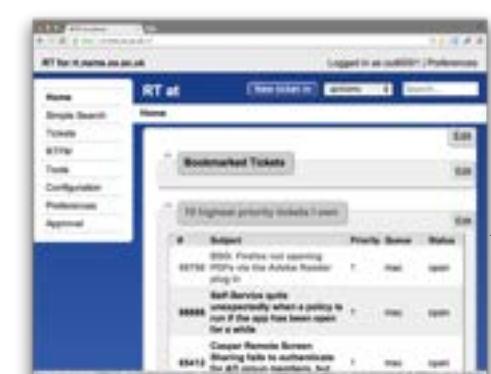
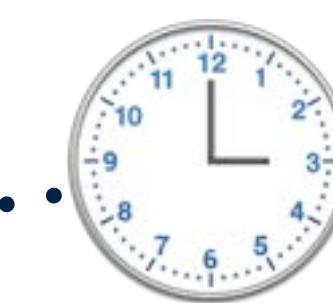




JSS



Inventory:  
HFS Logs



ITSM



Backup Incident  
Reports

# Backup Status info



HFS Info: Backup Last Succeeded	HFS Info: Backup Latest Status	HFS Info: Client Version	HFS Info: Scheduler Last Check In	HFS Info: Scheduler Status	HFS: Host Name
Successfully (09-09-2013 23:18:21)	Successfully (09-09-2013 23:18:21)	6.4.0.5	16-09-2013 09:34:01	OK - PID 69	mmp-achilles-bsg
Successfully (16-09-2013 23:48:36)	Successfully (16-09-2013 23:48:36)	6.4.0.5	17-09-2013 11:48:38	OK - PID 17582	mmp-bsgagamemnon-bsg
Successfully (16-09-2013 19:49:22)	Successfully (16-09-2013 19:49:22)	6.4.0.5	17-09-2013 07:49:24	OK - PID 2759	mmp-agrippa-bsg
Successfully (09-09-2013 18:45:58)	Successfully (09-09-2013 18:45:58)	6.4.0.5	16-09-2013 07:21:18	OK - PID 108	mmp-bsgantonio-bsg
Successfully (16-09-2013 19:07:04)	Successfully (16-09-2013 19:07:04)	6.4.0.5	16-09-2013 19:07:04	OK - PID 90	mmp-bsgbalthazar-bsg
Successfully (16-09-2013 18:14:49)	Successfully (16-09-2013 18:14:49)	6.4.0.5	16-09-2013 18:14:51	OK - PID 69	mmp-bsgbanquo-bsg
Successfully (02-09-2013 21:53:02)	Successfully (02-09-2013 21:53:02)	6.4.0.5	16-09-2013 14:51:33	OK - PID 2864	mmp-bsgborachio-bsg
Successfully (16-09-2013 19:18:51)	Successfully (16-09-2013 19:18:51)	6.4.0.5	16-09-2013 19:18:51	OK - PID 107	mmp-bsgcaesar-bsg
Successfully (09-09-2013 22:14:40)	Successfully (09-09-2013 22:14:40)	6.4.0.5	16-09-2013 17:49:42	OK - PID 504	mmp-bsgcaliban-bsg
Successfully (09-09-2013 22:25:21)	Successfully (09-09-2013 22:25:21)	6.4.0.5	16-09-2013 10:25:27	OK - PID 71	mmp-bsgcalpurnia-bsg
Successfully (09-09-2013 22:35:21)	Successfully (09-09-2013 22:35:21)	6.4.0.5	16-09-2013 12:37:21	OK - PID 65	mmp-bsgcassandra-bsg
Successfully (09-09-2013 23:03:22)	Successfully (09-09-2013 23:03:22)	6.4.0.5	16-09-2013 12:03:29	OK - PID 7262	mmp-bsgcinna-bsg
Successfully (16-09-2013 21:05:41)	Successfully (16-09-2013 21:05:41)	6.3.0.0	16-09-2013 21:05:42	OK - PID 66	mmp-claudio-bsg
Successfully (09-09-2013 22:25:21)	Successfully (09-09-2013 22:25:21)	6.4.0.5	16-09-2013 10:25:27	OK - PID 71	mmp-bsgcalpurnia-bsg

```
#!/bin/bash
# (c) 2013 University of Oxford IT Services
# source https://github.com/ox-it/mac-scripts

function check_tsm_pid {
    DSMPID=$( launchctl list | \
        awk '/.*\tcom.ibm.tsm.dsmsched/ { \
            if ( $1 == "-" ) print "not running"; \
            else print $1; }' )
    DSMSTATUS=$( expr "$DSMPID" : '[0-9]*' )
}

check_tsm_pid

if [ $DSMSTATUS -gt 0 ]; then
    RESULT="OK - PID ${DSMPID}"
else
    launchctl unload ...
    launchctl load ...
    check_tsm_pid
    if [ $DSMSTATUS -gt 0 ]; then
        RESULT="OK - PID ${DSMPID} (restarted)"
    else
        RESULT="FAIL - failed restarting"
    fi
fi

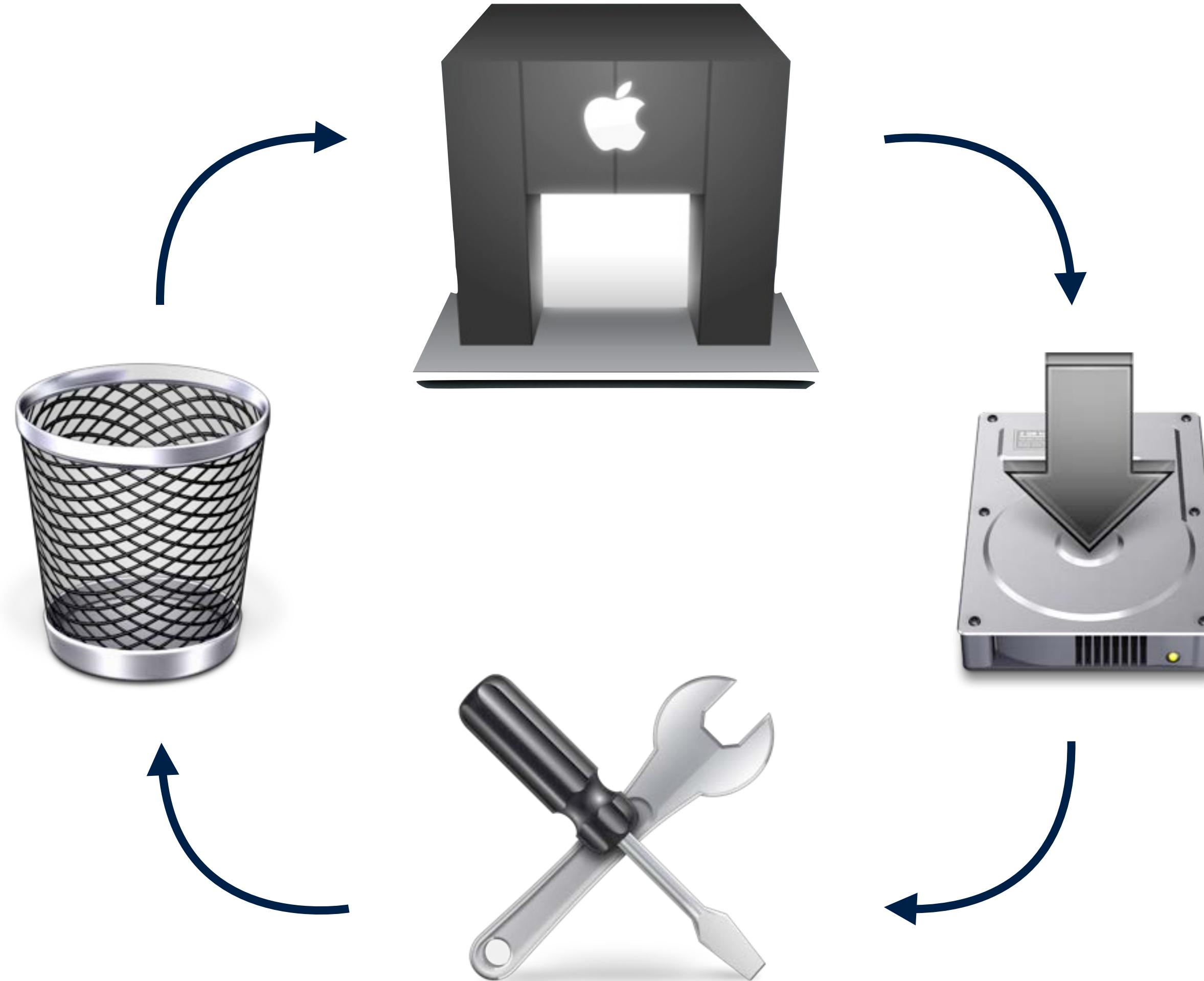
echo "<result>$RESULT</result>"
```

# User Experience Summary



# **How to satisfy the IT Crowd?**

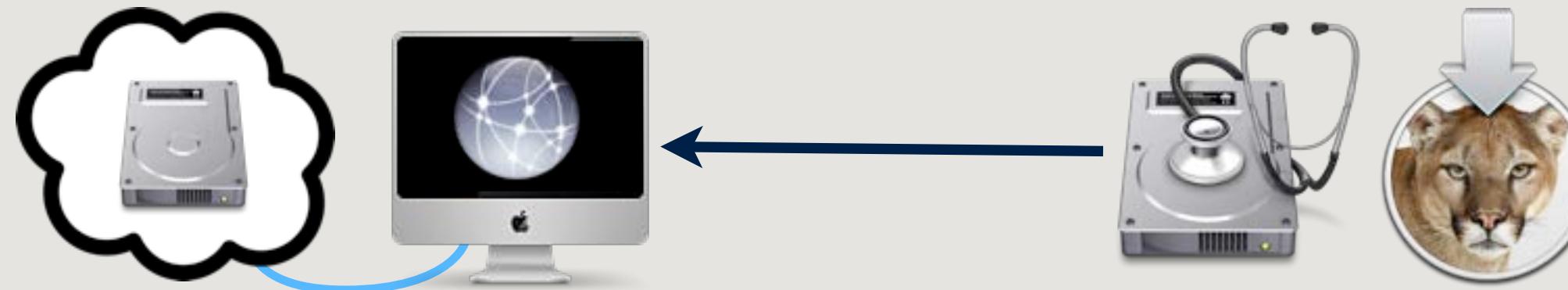
# Whole Lifecycle Management



# Commissioning



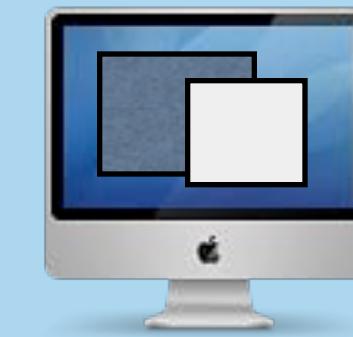
1. Registration



2. NetBoot



3. First Local Boot



Daily



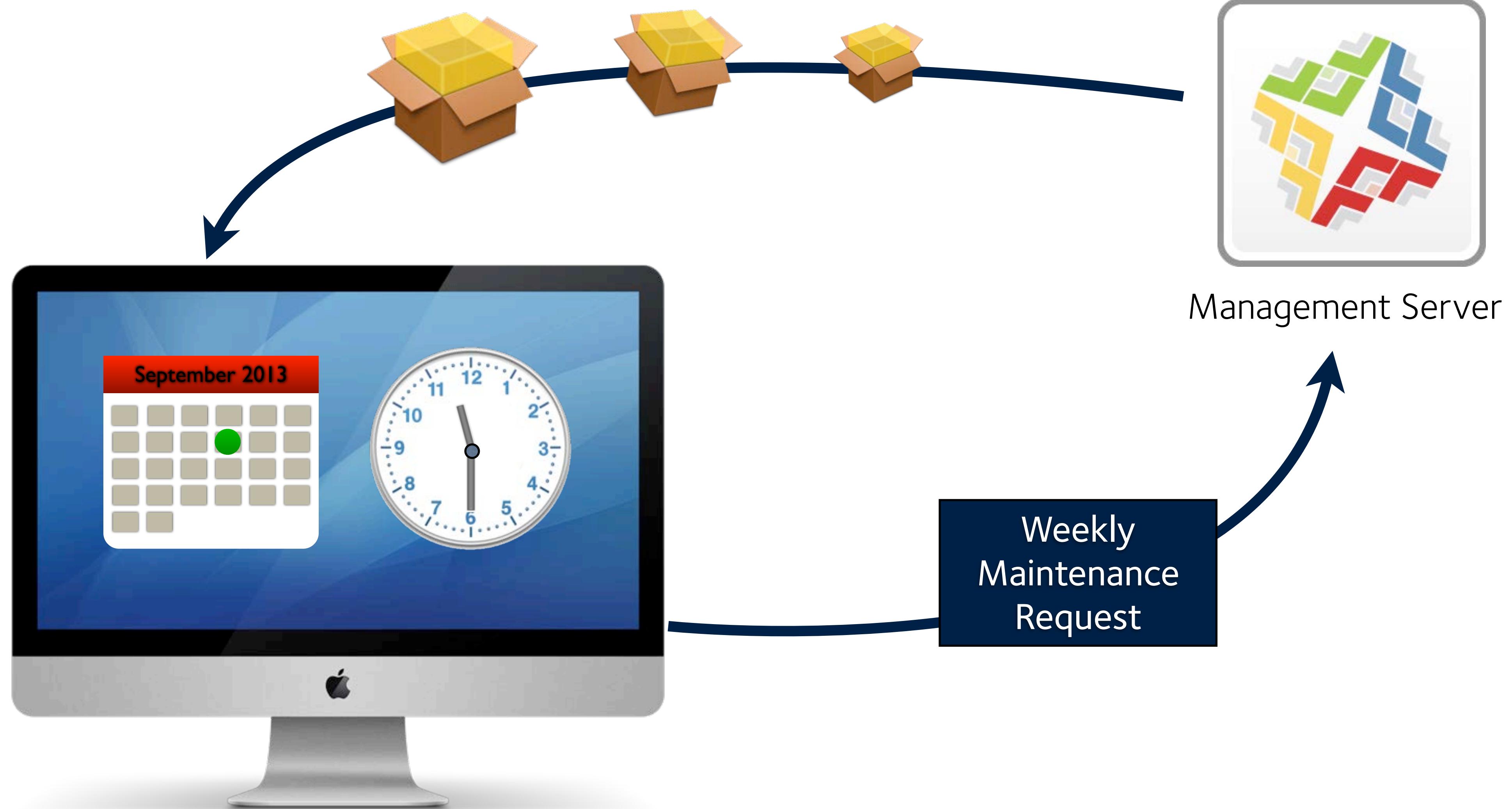
On Demand

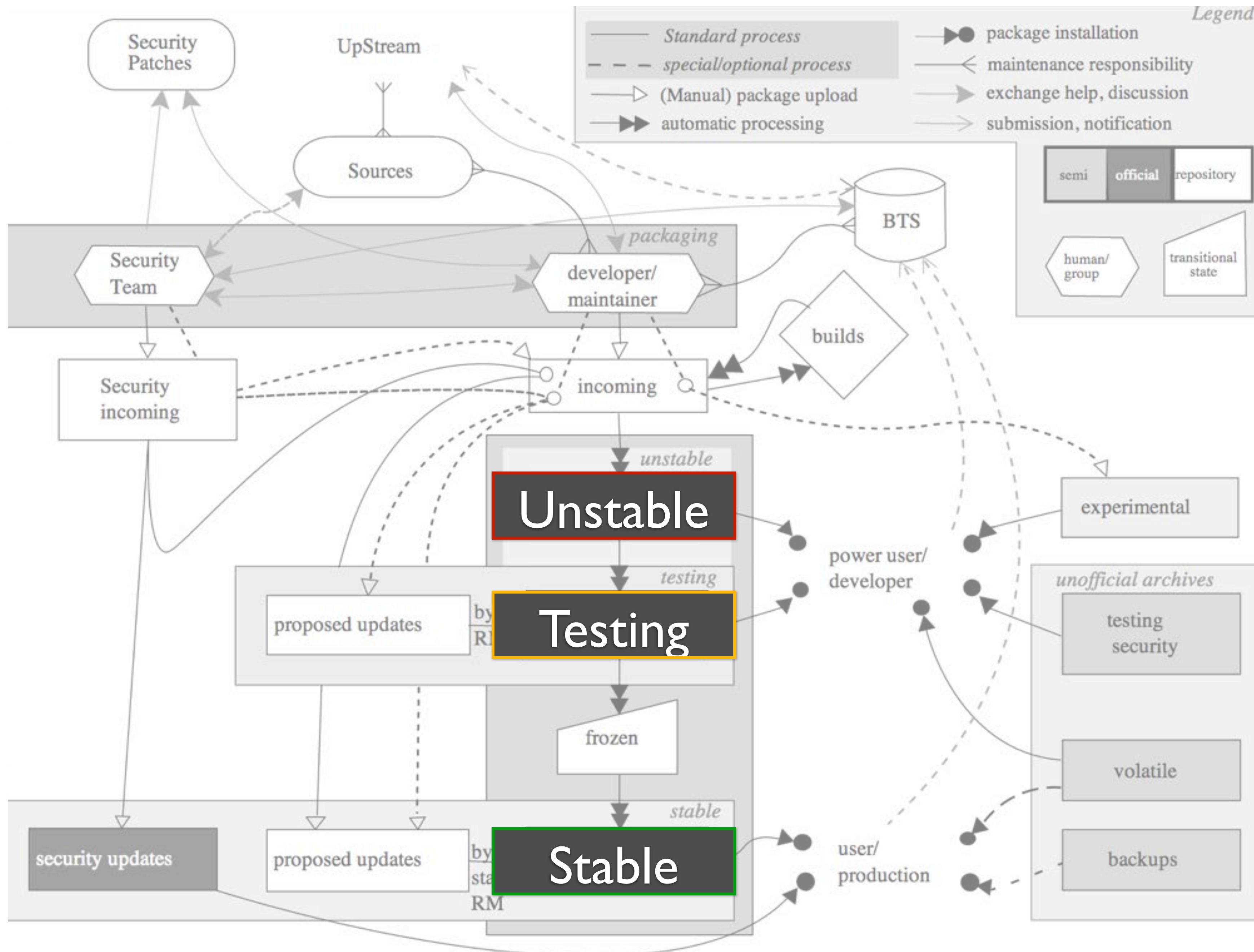


Weekly

4. Daily Use

# Weekly Maintenance





# Release channels



Week 1



24.1

Week 2



24.1



24.0

Week 3



24.2β



24.1

Week 4

Unstable



24.2β

Testing



24.1

Stable

# Update deployment



Edit Policy: Firefox Update Testing

General Scope Self Service Packages Scripts Printers Dock Accounts Reboot Advanced

Display and Execution Settings

Display Name: Firefox Update Testing

Category: Browsers

Triggered By: The SoftwareUpdate trigger

Execution Frequency: Once per computer

Cancel Save

A screenshot of a software interface titled 'Edit Policy: Firefox Update Testing'. The 'General' tab is selected. The 'Display and Execution Settings' section contains the following fields: Display Name (set to 'Firefox Update Testing'), Category (set to 'Browsers'), Triggered By (set to 'The SoftwareUpdate trigger'), and Execution Frequency (set to 'Once per computer'). At the bottom right of the dialog are 'Cancel' and 'Save' buttons.

Update policies respond to the SoftwareUpdate action  
and are also set to run once per computer.

# Update deployment



Edit Policy: Firefox Update Testing

General Scope Self Service Packages Scripts Printers Dock Accounts Reboot Advanced

Assign this Policy to these Computers

Assign to All Computers

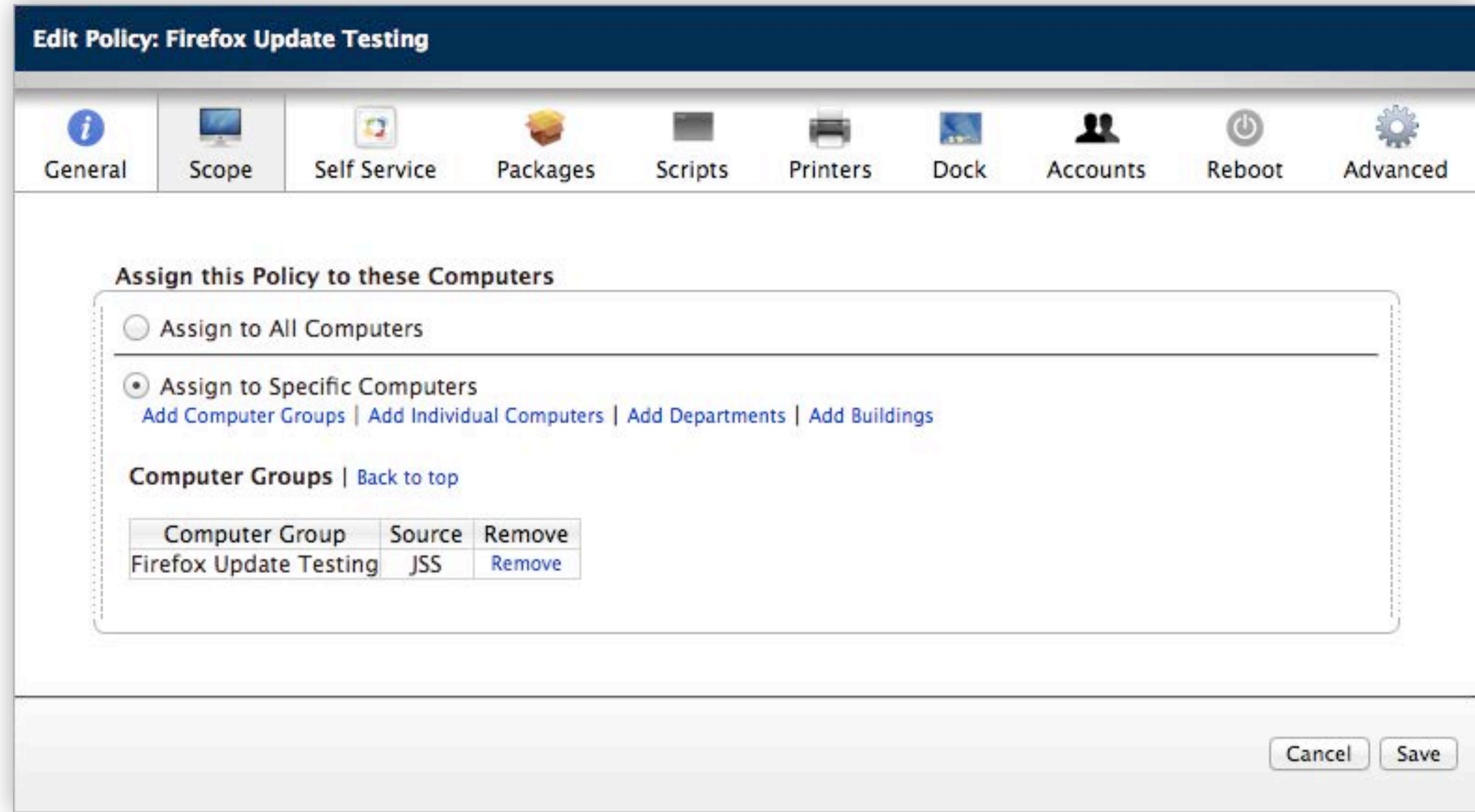
Assign to Specific Computers

[Add Computer Groups](#) | [Add Individual Computers](#) | [Add Departments](#) | [Add Buildings](#)

[Computer Groups](#) | [Back to top](#)

Computer Group	Source	Remove
Firefox Update Testing	JSS	<a href="#">Remove</a>

Cancel Save



For each software title there is a SmartGroup...

# Update deployment



Edit Smart Computer Group: Firefox Update Testing

ComputerGroup Name:	Firefox Update Testing		
Send Email Notification on Change: <input type="checkbox"/>			
Field	Search Type	Criteria	
Computer Information			
Software installation & patching	is not	Off	- +
and	Release	is	Testing
Location Information			
Software Information			
Application Title	has	Firefox.app	- +
and	Application Version	is not	10.0.7
Purchasing Information			
		Cancel	Save

...searching for all hosts with a previous version  
of the application deployed.

# Update deployment

Edit Policy: Firefox Update Testing

General Scope Self Service Packages Scripts Printers Dock Accounts Reboot Advanced

Packages

Package Name	Action	FUT	FEU	Autorun	Remove
Firefox_3.6.13.dmg	Uninstall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>
Firefox-ESR_10.0.7-1.dmg	Install	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>
Firefox_4.0-1.dmg	Uninstall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>
Firefox-ESR_10.0.2-1.0.0.dmg	Uninstall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>
Firefox-ESR_10.0.3-1.0.0.dmg	Uninstall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>
Firefox_7.0.2-1.dmg	Uninstall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>
Firefox-ESR_10.0.6-1.dmg	Uninstall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>
Firefox-ESR_10.0.5-1.dmg	Uninstall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">Remove</a>

Add Package

Cancel Save

The policy initially tries to remove any previous version before the new package is deployed.

# Update deployment



Edit Policy: Firefox Update Testing

General Scope Self Service Packages Scripts Printers Dock Accounts Reboot Advanced

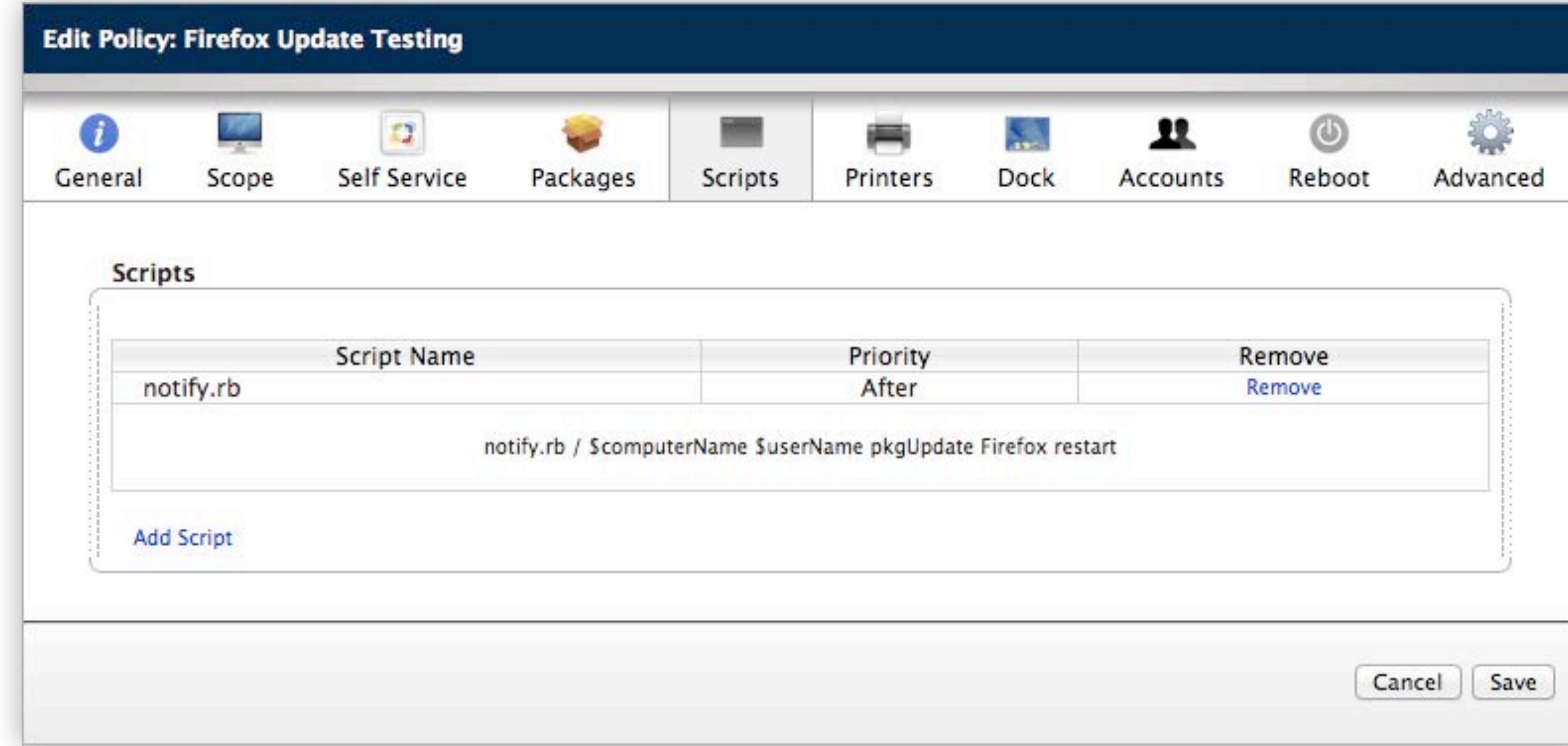
Scripts

Script Name	Priority	Remove
notify.rb	After	Remove

notify.rb / \$computerName \$userName pkgUpdate Firefox restart

Add Script

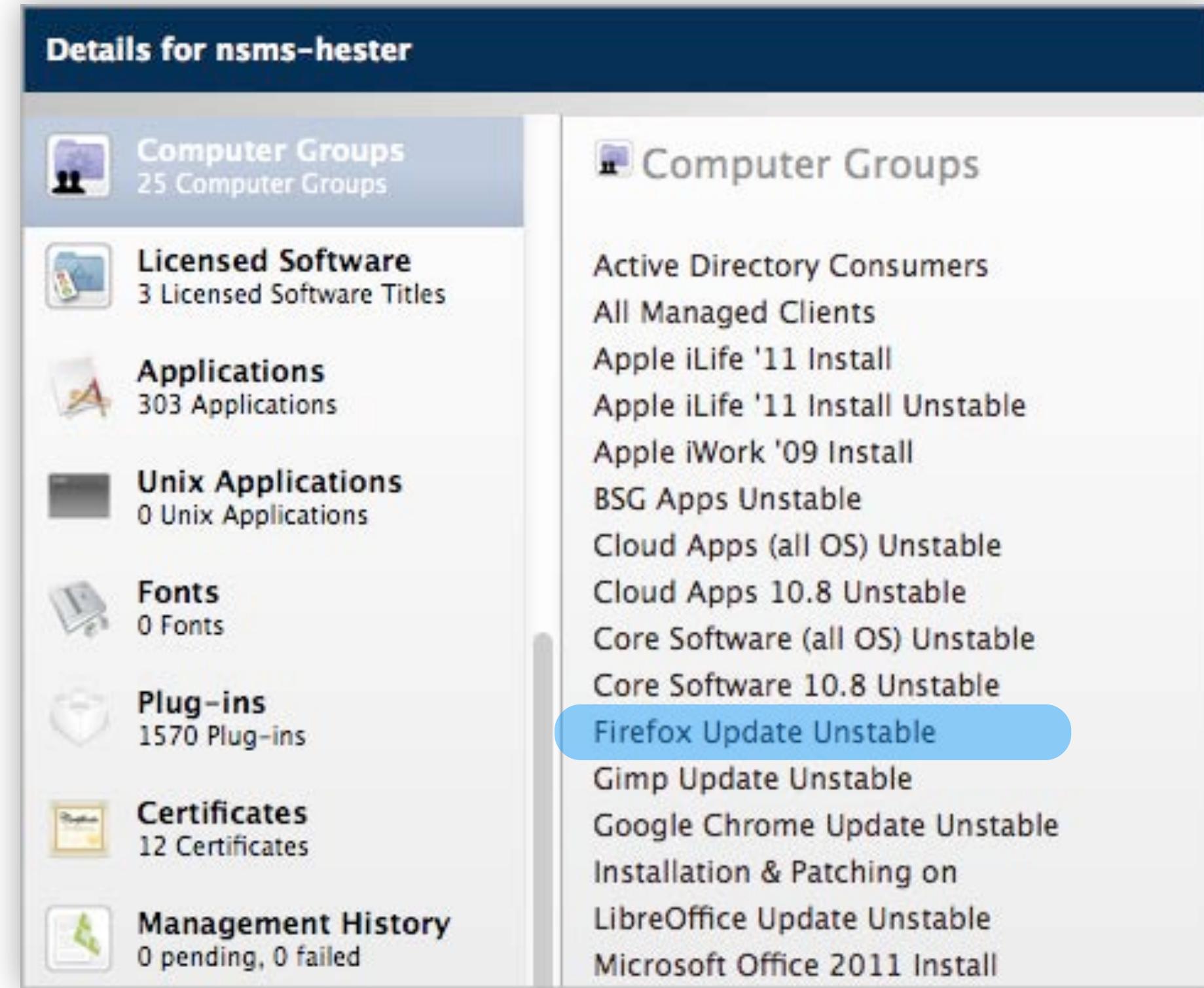
Cancel Save



Finally our notification system informs the user to restart the application.

# Update deployment

Details for nsms-hester



Computer Groups	25 Computer Groups
Licensed Software	3 Licensed Software Titles
Applications	303 Applications
Unix Applications	0 Unix Applications
Fonts	0 Fonts
Plug-ins	1570 Plug-ins
Certificates	12 Certificates
Management History	0 pending, 0 failed

Computer Groups

- Active Directory Consumers
- All Managed Clients
- Apple iLife '11 Install
- Apple iLife '11 Install Unstable
- Apple iWork '09 Install
- BSG Apps Unstable
- Cloud Apps (all OS) Unstable
- Cloud Apps 10.8 Unstable
- Core Software (all OS) Unstable
- Core Software 10.8 Unstable
- Firefox Update Unstable
- Gimp Update Unstable
- Google Chrome Update Unstable
- Installation & Patching on
- LibreOffice Update Unstable
- Microsoft Office 2011 Install

The computer groups in each host details give a very precise overview of what will be updated during the next update cycle.

# Essentials, Plug-ins and Players



JRE 6 and JRE 7

# The Java Browser Plug-in Saga



32bit  
~~Java 6~~

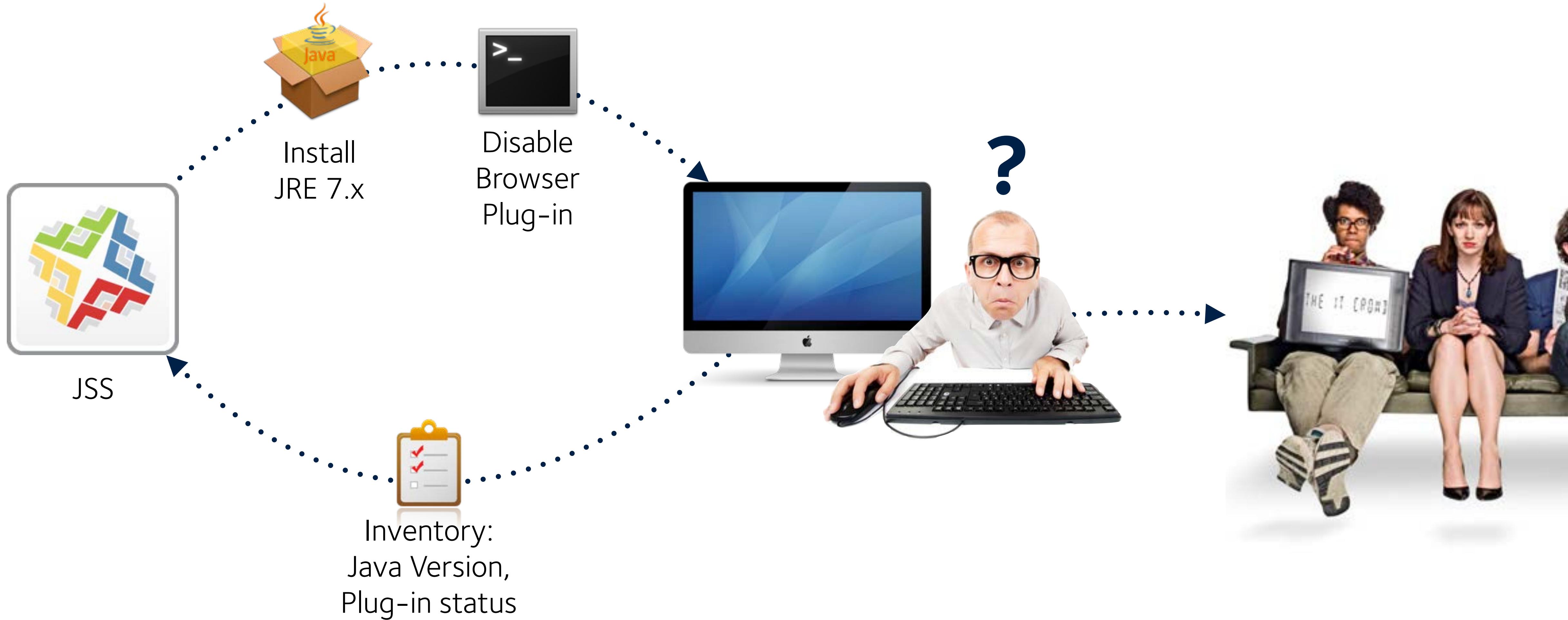


64bit  
Java 7

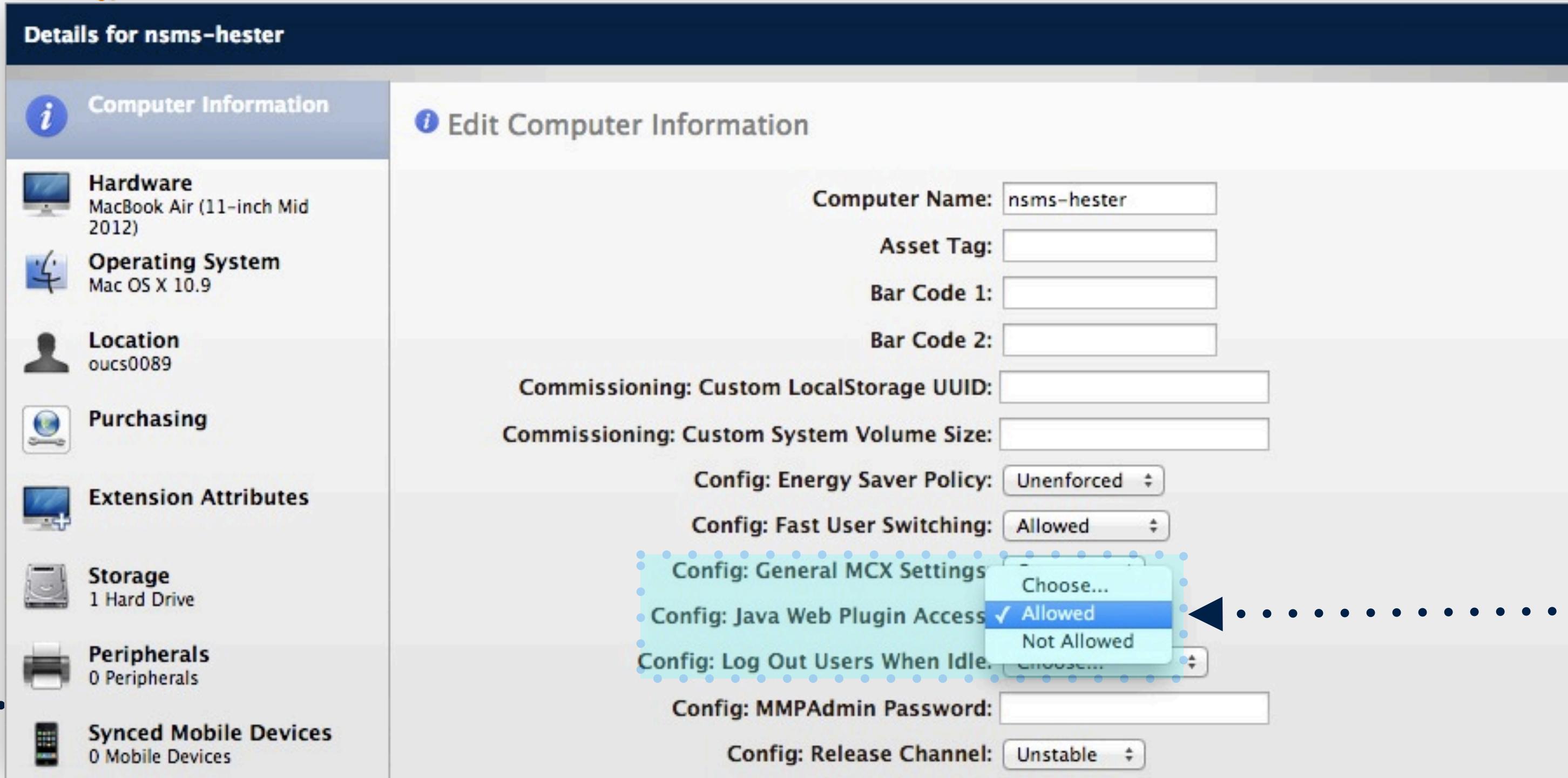


64bit  
Java 7

# Java 7 Workflow



# Java 7 Workflow



The screenshot shows the 'Edit Computer Information' screen for a Mac named 'nsms-hester'. The left sidebar lists hardware, operating system, location, purchasing, extension attributes, storage, peripherals, and synced mobile devices. The main panel contains fields for Computer Name (nsms-hester), Asset Tag, Bar Code 1, Bar Code 2, and various configuration dropdowns. A context menu is open over the 'Config: Java Web Plugin Access' field, showing options: Choose..., Allowed (which is selected), and Not Allowed.

JSS

Inventory:  
Java Version,  
Plug-in status



# Java 7 Workflow



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JSS

The screenshot shows the 'Support' section of the Self Service application. It includes the following items:

- Java Web Plugin Master Switch**: Launch button.
- Mount Departmental Shares**: Mount Shares button.
- Reinstall Blavatnik School of Government Printers**: Reinstall button.
- Reinstall NSMS Printers**: Reinstall button.
- Reinstall OUCS Help Centre Printers**: Reinstall button.
- Run Apple Software Update**: Update button.
- Spotlight Index**: Run button.
- System Inventory**: Inventory button.
- Uninstall Endnote X4**: Uninstall button.
- Wacom Tablet Drivers Unstable**: Install button.

The sidebar on the left lists:

- Self Service (mmpjss.nsms.ox.ac.uk)
- Getting Started (New to the Mac?)
- Help (Request support from NSMS)
- Knowledge Base (Frequently asked questions)
- Latest Updates (The MMP Software Updates blog)

The right sidebar shows categories:

- Featured
- Communications and Web
- Design and Media
- Licensed Software
- Office and Productivity
- Scientific
- Support
- System Administration
- Updates
- Utilities

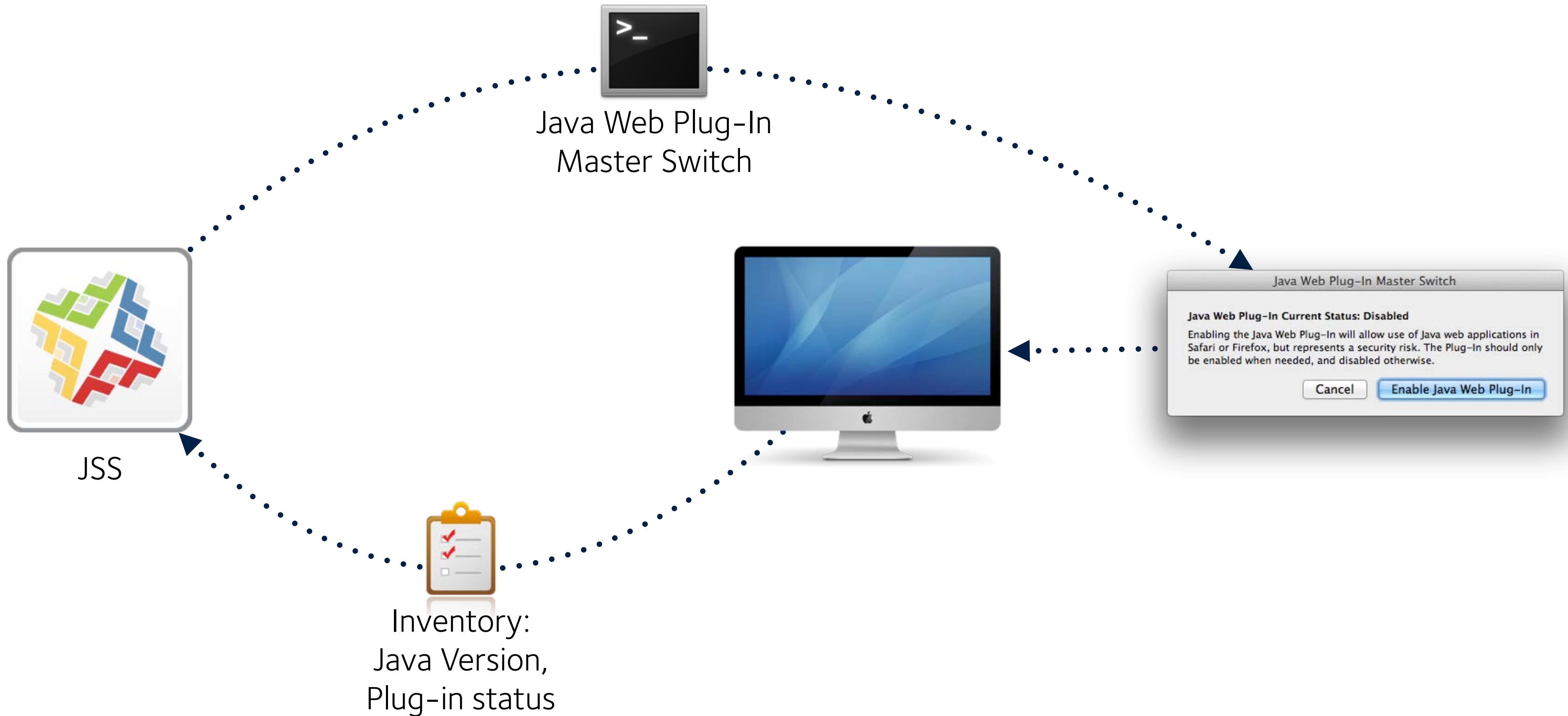
# Java 7 Workflow



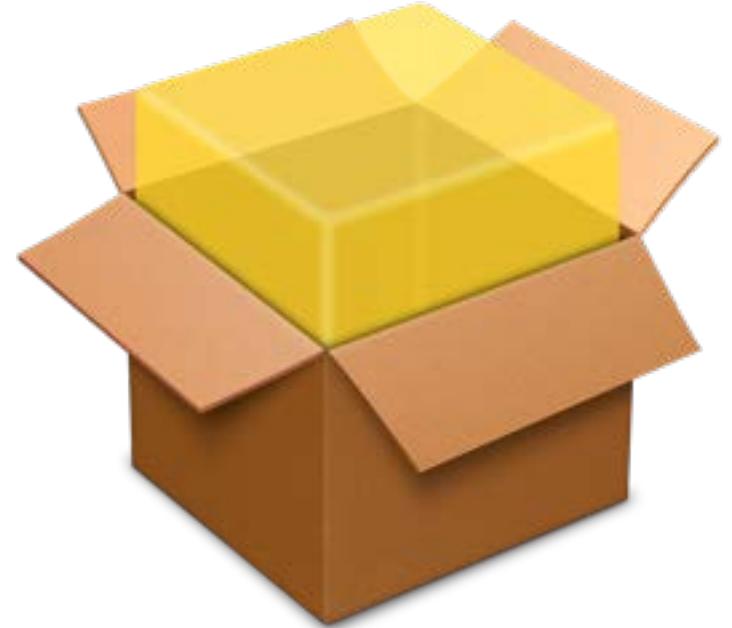
JSS



# Java 7 Workflow



# IT Staff Experience Summary



# IT Staff Experience Summary



## Management Compatibility Checklist

- Public Cloud Infrastructure ✓
- Bring your own disaster ✓
- Enterprise Social Networking ✓
- Cyber Security ✓
- Gamification ✓



# Carrot and a Stick!?





<https://github.com/ox-it/mac-scripts>

# Thank you!

marko.jung@it.ox.ac.uk    @mjung



# Questions?

marko.jung@it.ox.ac.uk    @mjung